U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE
SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS

BRIEFING CHARTER

Great Lakes Restoration: How? How Soon?

April 21, 2006
1:00 p.m. to 3:00 p.m. (EDT)

L.V. Eberhard Center
Grand Valley State University
301 West Fulton Street
Grand Rapids, MI 49504-6495

Purpose:

On April 21, 2006 at 1:00 p.m. in Grand Rapids, Michigan, the Subcommittee on Environment, Technology, and Standards of the House Science Committee will hold a briefing to explore how agencies and policy makers prioritize and manage science to meet resource management information needs for Great Lakes restoration.

The Great Lakes Regional Collaboration (GLRC), a consortium of federal, state, regional, local, and non-governmental stakeholders led by the Environmental Protection Agency (EPA), recently completed a comprehensive strategy for restoring the Great Lakes and associated watersheds. The strategy, which is strongly supported by the many organizations involved in its creation, establishes goals and provides guidance to the many agencies, organizations, and resource managers involved in Great Lakes restoration. It also describes the science and scientific tools needed to support the restoration priorities.

The briefing will examine the following overarching questions:

1. Does the GLRC strategy adequately identify and set priorities for science needs?

2. Will the GLRC strategy help overcome longstanding coordination issues, particularly as they relate to science?

3. Has the GLRC strategy led to or is it expected to lead to effective use of science in making decisions on Great Lakes restoration? What is the appropriate role for regional, federal, state, and local scientists and decision makers in this process?

4. What near-term progress can be made to meet priority restoration goals with existing science and scientific information? To what extent will additional research be required to meet other high priority goals?

Witnesses:

- Mr. Gary Gulezian of EPA's Great Lakes National Program Office. EPA is the lead federal agency on the Great Lakes Regional Collaboration and is responsible for coordinating research and restoration activities of federal agencies in the Great Lakes.

- Dr. Stephen Brandt, Director of the National Oceanic and Atmospheric Administration's (NOAA) Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor Michigan. GLERL's mission includes the development of new knowledge, information and tools for use in managing Great Lakes resources.

- Ms. Catherine Cunningham Ballard, Chief of the Coastal Management Program in Michigan's Environmental Science and Services Division of the Department of Environmental Quality. The Coastal Management Program funds scientific research that directly informs coastal management decisions

- Dr. Alan Steinman, Director of the Annis Water Resources Institute (AWRI) at Grand Valley State University, Muskegon, Michigan. Experts at AWRI study land use changes and the impacts on water resources and ecosystem services, and provide information and tools to local and state governments and other resource managers.

- Dr. Don Scavia of the Healing Our Waters Coalition. Healing Our Waters is a nongovernmental organization involved in Great Lakes restoration and in the Great Lakes Regional Collaboration process.

Summary of Issues:

Great Lakes restoration has been a regional priority since the 1972 Great Lakes Water Quality Agreement with Canada established common water quality objectives to be achieved by both countries. However, most stakeholders in the region believe that restoration efforts have not yet met the water quality or other subsequent ecosystem goals. While there is consensus among those involved in restoration efforts that scientific research and information must underpin any Great Lakes restoration process, research programs in the Great Lakes remain uncoordinated. This hearing will examine the following major issues that relate to science and its role in Great Lakes restoration:

1. Leadership and coordination -- Many agencies, non-governmental organizations, resource users, and other stakeholders share the belief that strong leadership and coordination is needed to facilitate cohesive efforts to address the complex and large-scale problems that face the Great Lakes.

Currently, the lack of coordination of science programs is widely perceived to result in duplication of effort and missed opportunities to address the complex, multi-disciplinary scientific questions facing resource managers.

2. Integrating Science and Resource Management -- Individual program and issue-specific efforts are underway to support integration of science and scientific information into Great Lakes resource management decisions. However, the effectiveness and reach of these programs has not yet been evaluated and it is unclear to what extent they reflect priorities in the GLRC strategy.

3. Prioritizing Science and Information Needs -- The GLRC strategy identifies science and restoration needs, but does not prioritize the list of needs. This leaves it unclear where scientists and agencies that fund Great Lakes science should focus their efforts.

4. Near-term Opportunities -- The GLRC strategy acknowledges that new funding and more research will be required to meet long-term restoration goals. Despite that, opportunities exist for near-term progress by federal, state, regional and local managers based on currently available scientific knowledge and funding. Many stakeholders believe the effectiveness of continued restoration efforts rely critically on identifying and implementing these near-term opportunities.

Background:

Great Lakes Restoration Efforts

The Great Lakes are the largest surface freshwater system in the world. Over 35 million people use the Great Lakes system for drinking water, irrigation, commerce, transportation, food, recreation, and cultural needs. Early concerns with the health of the Great Lakes and those that depend on them focused on industrial pollution and sewage. In 1972, the United States and Canada signed the Great Lakes Water Quality Agreement formally recognizing the need for a comprehensive and coordinated approach to address water quality concerns in the Great Lakes basin. Since then, even as progress has been made reducing point source pollution, there has been growing concern with nonpoint source pollution, such as urban and agricultural runoff, contaminated sediment and the growth of nonnative species.

In 1987, after many unsuccessful efforts to coordinate research and restoration activities in the Great Lakes Congress directed EPA to coordinate federal research and restoration activities related to Great Lakes water quality through the Great Lakes National Program Office (GLNPO).

In 2002, GLNPO completed the *Great Lakes Strategy*. Developed by consensus among federal, state, tribal and regional agencies, the document laid out research and restoration

goals, as well as planned actions to reach these goals. However, in 2003 the Government Accountability Office (GAO) ("An Overall Strategy and Indicators for Measuring Progress Are Needed to Better Achieve Restoration Goals", GAO Report 03-515, April 2003) criticized the *Great Lakes Strategy 2002* for simply describing previously planned program activities, failing to prioritize research and restoration activities, and failing to secure meaningful commitments for action from the participants. Also, GAO recommended that GLNPO be charged with development of an overall Great Lakes restoration strategy in consultation with governors, federal agencies, and other stakeholder organizations.

Great Lakes Regional Collaboration

On May 18, 2004, President Bush issued Executive Order 13340, establishing the Great Lakes Interagency Task Force and charging it with the development of a comprehensive restoration strategy through a process known as the Great Lakes Regional Collaboration (GLRC). Setting it apart from previous efforts, the GLRC involved over 1500 people and brought federal, state, tribal and regional agencies together with academic, industry, and other non-governmental representatives in an attempt to develop a strategy for Great Lakes restoration. This strategy includes the perspectives of, and subsequently has the support of, a broad cross-section of public and private sector stakeholders. GLRC established working groups with representatives of federal, state, tribal and regional agencies, academia, industry, and other non-governmental organizations to develop goals and recommendations in eight priority areas identified by the Council of Great Lakes Governors (Aquatic Invasive Species; Habitat/Species; Coastal Health; Areas of Concern/Sediments; Nonpoint Source Pollution; Toxic Pollutants; Indicators and Information; and Sustainable Development).

Great Lakes Regional Collaboration Strategy

The results of the eight working groups were compiled into a comprehensive restoration strategy. On December 12, 2005, EPA released the GLRC Strategy (http://www.epa.gov/greatlakes/collaboration/strategy.html). The document summarizes the issues and proposes actions to address the eight restoration priorities. Each chapter of the strategy addresses one of the priority issues listed above and includes recommended goals, actions and milestones. Some of the recommendations include cost estimates. However, the strategy does not prioritize the recommendations from each individual chapter into an overall recommendation.

Science in the GLRC Strategy

The Indicators and Information chapter of the GLRC Strategy directly addressed the science needs to support Great Lakes restoration with five broad recommendations: implementation of comprehensive and coordinated observing systems; support for ongoing development of science-based indicators of ecosystem health; doubling of funding for Great Lakes research; establishment of a regional information management

infrastructure; and creation of a workgroup to improve communication of scientific and technical information between scientists, policy makers and the public.

Major Issues:

Leadership and Coordination

Problem: As the scale and complexity of issues facing the Great Lakes have increased, so has the call for large-scale, coordinated science programs. In 2003, GAO identified EPA as the federal agency with the statutory authority to take the needed leadership and coordination roles in Great Lakes research and restoration efforts, and noted that EPA had not yet exercised its full authority in these capacities. Currently, the lack of coordination of science programs is widely perceived to result in duplication of effort and missed opportunities to address the complex, multi-disciplinary scientific questions facing Great Lakes resource managers.
GLRC Action: Many participants in GLRC believe EPA exhibited new leadership throughout the development of the GLRC strategy. However, the GLRC strategy expresses community consensus and does not set priorities, and it remains to be seen what the next steps will be now that the GLRC strategy is complete.
Remaining Questions: Will EPA continue to take a strong leadership and coordination role for itself as the GLRC Strategy is implemented, and research and restoration priorities are set? What are the appropriate leadership and coordination roles for the other federal and non-federal participants in the GLRC process?

Integrating Science and Resource Management

Problem: Effectively integrating science and science-based information into resource management practices is critical to the long-term success of any ecosystem restoration efforts. EPA and NOAA, as well as many non-governmental organizations, have begun developing science-to-management initiatives to address this issue in the Great Lakes. These programs bring scientists and resource managers together to collaboratively develop tools that both accurately reflect the state of the scientific knowledge, and meet the real-world information and decision-support needs of resource managers. However, the effectiveness and reach of these programs have not yet been evaluated and it is unclear to what extent they reflect priorities in the GLRC strategy.
GLRC Action: The GLRC process strengthened working relationships between and among scientists and resource managers who work on Great Lakes issues by bringing them together to develop restoration goals. While this partnership is not formalized in the Strategy (or any other official document), it reflects an intangible benefit of the GLRC process because it improves communication among those involved at all levels of Great Lakes research and restoration.
Remaining Questions: Are the current science-to-management programs resulting in better use of science in resource management decisions? Are the programs reaching those resource managers who most need them, and are they meeting their needs for science and scientific information?

Prioritizing Science and Information Needs

Problem: The Indicators and Information chapter of the GLRC strategy focused explicitly on science and information needs. Other chapters called for additional new research and information, highlighting the need for a strong science program to support Great Lakes restoration. However, the science and information needs are not prioritized.
GLRC Action: Specific scientific recommendations include installation of an integrated observing system, formation of a communications working group, development of new ecosystem forecasting models, and doubling of Great Lakes research funding. Costs for these recommendations range from $200 thousand per year to $35 million per year.
Remaining Questions: The GLRC Strategy does not prioritize its recommendations for science needs. What is the process by which these priorities will be set? Will science and information priorities be driven by scientists, managers, or both?

Near-term Opportunities

Problem: While the final Great Lakes Regional Collaboration Strategy was enthusiastically welcomed by the Great Lakes research and management communities, concerns remain about what happens next. The GLRC strategy acknowledges that significant new funding will be required to meet long-term research and restoration goals. The cost for full implementation of the GLRC Strategy over five years has been estimated at over $20 billion.
GLRC Action: Even without new money or further research, some stakeholders believe significant opportunities remain for near-term progress by federal, state, regional and local managers. Examples may include expanding science-to-management programs, wider dissemination of existing scientific information and tools, and implementing more effective networks to disseminate science and management information.
Remaining Questions: What are the near-term opportunities for progress on Great Lakes restoration, based on currently available science and funding? What can federal agencies do to ensure that these opportunities are fully exploited? Are there near-term science needs that, if met, will open up new near-term restoration opportunities? To what extent should these opportunities be pursued if doing so comes at the cost of other programs?

Witness Questions:

Mr. Gary Gulezian, Director of EPA's Great Lakes National Program Office

Please provide a brief overview of the Great Lakes Regional Collaboration (GLRC) and the key elements of the recently published GLRC Strategy, particularly a description of the science needs as outlined in the Strategy. In addition, please address the following questions:

1. What is EPA's role in implementing the Strategy? In particular, what is EPA's role in:
    a. coordinating implementation of new and existing science programs and policies;
    b. setting budget priorities for federal Great Lakes research programs; and
    c. strengthening the relationship between scientists and policy makers?
2. To what extent has EPA shifted funding to implement the GLRC Strategy and to what extent will it shift funding in the future?
3. What are the biggest challenges that you see in implementing the Strategy, particularly in terms of meeting science and information needs?
4. What outcomes do you expect to see one year from now as a result of implementation of the GLRC Strategy?

Dr. Stephen Brandt, Director of NOAA's Great Lakes Environmental Research Lab

Please briefly describe the role of NOAA and the Great Lakes Environmental Research Lab in the Great Lakes Regional Collaboration (GLRC). In addition, please address the following questions:

1. Has the GLRC led to more informed resource management planning decisions? What kinds of scientific information are now being taken into account in those decisions because of the GLRC? To what extent has the GLRC helped foster new or stronger collaboration between scientists and policy makers? What is NOAA's role in strengthening the relationship between scientists and policy makers?
2. To what extent has NOAA shifted funding to implement the GLRC Strategy and to what extent will it shift funding in the future?
3. What are the biggest challenges that you see in implementing the Strategy, particularly in terms of meeting science and information needs?
4. What outcomes do you expect to see one year from now as a result of implementing the GLRC Strategy?

Ms. Catherine Cunningham Ballard, Coastal Manager, Michigan Department of Environmental Quality

Please briefly describe the resource management responsibilities of the Michigan Department of Environmental Quality. In addition, please describe your involvement in the Great Lakes Regional Collaboration (GLRC) by addressing the following questions:

1. What are the top three recommendations in the GLRC Strategy that you believe could be implemented with existing funding? What scientific research, scientific information, or science-based products are required to support the implementation of these three recommendations? Would your answers be different if funding could be increased?
2. Has the GLRC led to more informed resource management planning decisions? What kinds of scientific information are now being taken into account in those decisions because of the GLRC? To what extent has the GLRC helped foster new or stronger collaboration between scientists and policy makers? What is your role in strengthening the relationship between scientists and policy makers?
3. Does the Strategy effectively reflect your needs and help you to prioritize your work? Are there additional actions EPA and other federal agencies should be taking to help implement the GLRC? What scientific research, scientific information, or science-based products do you need for making resource management policy decisions? If possible, please describe examples of research that you have found particularly useful to your work as a resource manager.
4. What are the biggest challenges you see in implementing the Strategy, particularly in terms of meeting science and information needs?
5. What outcomes do you expect to see one year from now as a result of implementing the GLRC Strategy?

Dr. Alan Steinman, Director of the Annis Water Resources Institute

Please briefly describe your participation, and that of the Annis Water Resources Institute (AWRI), in the Great Lakes Regional Collaboration (GLRC) and the resulting Strategy. In addition, please address the following questions:

1. What are the top three recommendations in the GLRC Strategy that you believe could be implemented with existing funding? What scientific research, scientific information, or science-based products are required to support the implementation of these three recommendations? Would your answers be different if funding could be increased?
2. Has the GLRC led to more informed resource management planning decisions? What kinds of scientific information are now being taken into account in those decisions because of the GLRC? To what extent has the GLRC helped foster new or stronger collaboration between scientists and policy makers? What is your role in strengthening the relationship between scientists and policy makers?
3. Does the Strategy effectively reflect your needs and help you to prioritize your work? Are there additional actions EPA and other federal agencies should be

taking to help implement the GLRC?
4. What are the biggest challenges you see in implementing the Strategy, particularly in terms of meeting science and information needs?
5. What outcomes do you expect to see one year from now as a result of implementing the GLRC Strategy?

Dr. Donald Scavia, Healing Our Waters Coalition

Please briefly describe your coalition's participation in the Great Lakes Regional Collaboration (GLRC), and the resulting Strategy. In addition, please address the following questions:

1. What are the top three recommendations in the GLRC Strategy that you believe could be implemented with existing funding? What scientific research, scientific information, or science-based products are required to support the implementation of these three recommendations? Would your answers be different if funding could be increased?
2. Has the GLRC led to more informed resource management planning decisions? What kinds of scientific information are now being taken into account in those decisions because of the GLRC? To what extent has the GLRC helped foster new or stronger collaboration between scientists and policy makers? What is your role in strengthening the relationship between scientists and policy makers?
3. Are there additional actions EPA and other federal agencies should be taking to help implement the GLRC?
4. What are the biggest challenges you see in implementing the Strategy, particularly in terms of meeting science and information needs?
5. What outcomes do you expect to see one year from now as a result of implementing the GLRC Strategy?